



ANADARKO PETROLEUM CORP.

ANADARKO COLORADO NORTHERN ZONE NAD 83

WELD_Johnstown Farms

Johnstown Farms 19-9

Johnstown Farms 19-9

Plan: Johnstown Farms 19-9 (wp01)

Standard Planning Report

27 September, 2010





Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Johnstown Farms 19-9
Company:	ANADARKO PETROLEUM CORP.	TVD Reference:	WELL @ 4780.00ft (Original Well Elev)
Project:	ANADARKO COLORADO NOTHERN ZONE NAD 83	MD Reference:	WELL @ 4780.00ft (Original Well Elev)
Site:	WELD_Johnstown Farms	North Reference:	True
Well:	Johnstown Farms 19-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	Johnstown Farms 19-9		
Design:	Johnstown Farms 19-9 (wp01)		

Project	ANADARKO COLORADO NOTHERN ZONE NAD 83, ROCKIES, ROCKIES		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	WELD_Johnstown Farms		
Site Position:		Northing:	1,361,567.94 ft
From:	Lat/Long	Easting:	3,167,029.59 ft
Position Uncertainty:	0.00 ft	Slot Radius:	in
		Latitude:	40° 19' 27.682 N
		Longitude:	104° 54' 3.380 W
		Grid Convergence:	0.39 °

Well	Johnstown Farms 19-9		
Well Position	+N/-S	-38.99 ft	Northing:
	+E/-W	-9.48 ft	Easting:
Position Uncertainty		0.00 ft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	Johnstown Farms 19-9				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2009	9/27/2010	8.97	67.01	53,172

Design	Johnstown Farms 19-9 (wp01)			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	202.57

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
716.48	8.33	202.57	715.01	-27.91	-11.60	2.00	2.00	0.00	202.57	
1,878.71	8.33	202.57	1,864.99	-183.38	-76.23	0.00	0.00	0.00	0.00	
2,295.19	0.00	0.00	2,280.00	-211.28	-87.83	2.00	-2.00	0.00	180.00	
7,295.19	0.00	0.00	7,280.00	-211.28	-87.83	0.00	0.00	0.00	0.00	Johnstown 19-9 BH

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Johnstown Farms 19-9
Company:	ANADARKO PETROLEUM CORP.	TVD Reference:	WELL @ 4780.00ft (Original Well Elev)
Project:	ANADARKO COLORADO NOTHERN ZONE NAD 83	MD Reference:	WELL @ 4780.00ft (Original Well Elev)
Site:	WELD_Johnstown Farms	North Reference:	True
Well:	Johnstown Farms 19-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	Johnstown Farms 19-9		
Design:	Johnstown Farms 19-9 (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	2.00	202.57	399.98	-1.61	-0.67	1.75	2.00	2.00	0.00
500.00	4.00	202.57	499.84	-6.44	-2.68	6.98	2.00	2.00	0.00
600.00	6.00	202.57	599.45	-14.49	-6.02	15.69	2.00	2.00	0.00
700.00	8.00	202.57	698.70	-25.74	-10.70	27.88	2.00	2.00	0.00
716.48	8.33	202.57	715.01	-27.91	-11.60	30.22	2.00	2.00	0.00
9 5/8"									
751.84	8.33	202.57	750.00	-32.64	-13.57	35.34	0.00	0.00	0.00
800.00	8.33	202.57	797.65	-39.08	-16.24	42.32	0.00	0.00	0.00
900.00	8.33	202.57	896.60	-52.45	-21.81	56.81	0.00	0.00	0.00
1,000.00	8.33	202.57	995.54	-65.83	-27.37	71.29	0.00	0.00	0.00
1,100.00	8.33	202.57	1,094.49	-79.21	-32.93	85.78	0.00	0.00	0.00
1,200.00	8.33	202.57	1,193.43	-92.59	-38.49	100.27	0.00	0.00	0.00
1,300.00	8.33	202.57	1,292.38	-105.96	-44.05	114.75	0.00	0.00	0.00
1,400.00	8.33	202.57	1,391.32	-119.34	-49.61	129.24	0.00	0.00	0.00
1,500.00	8.33	202.57	1,490.27	-132.72	-55.17	143.73	0.00	0.00	0.00
1,600.00	8.33	202.57	1,589.21	-146.09	-60.73	158.21	0.00	0.00	0.00
1,700.00	8.33	202.57	1,688.16	-159.47	-66.29	172.70	0.00	0.00	0.00
1,800.00	8.33	202.57	1,787.10	-172.85	-71.85	187.19	0.00	0.00	0.00
1,878.71	8.33	202.57	1,864.99	-183.38	-76.23	198.59	0.00	0.00	0.00
1,900.00	7.90	202.57	1,886.06	-186.15	-77.38	201.59	2.00	-2.00	0.00
2,000.00	5.90	202.57	1,985.33	-197.25	-82.00	213.61	2.00	-2.00	0.00
2,100.00	3.90	202.57	2,084.96	-205.14	-85.28	222.16	2.00	-2.00	0.00
2,200.00	1.90	202.57	2,184.83	-209.82	-87.22	227.23	2.00	-2.00	0.00
2,295.19	0.00	0.00	2,280.00	-211.28	-87.83	228.81	2.00	-2.00	0.00
2,300.00	0.00	0.00	2,284.81	-211.28	-87.83	228.81	0.00	0.00	0.00
2,400.00	0.00	0.00	2,384.81	-211.28	-87.83	228.81	0.00	0.00	0.00
2,500.00	0.00	0.00	2,484.81	-211.28	-87.83	228.81	0.00	0.00	0.00
2,600.00	0.00	0.00	2,584.81	-211.28	-87.83	228.81	0.00	0.00	0.00
2,700.00	0.00	0.00	2,684.81	-211.28	-87.83	228.81	0.00	0.00	0.00
2,800.00	0.00	0.00	2,784.81	-211.28	-87.83	228.81	0.00	0.00	0.00
2,900.00	0.00	0.00	2,884.81	-211.28	-87.83	228.81	0.00	0.00	0.00
3,000.00	0.00	0.00	2,984.81	-211.28	-87.83	228.81	0.00	0.00	0.00
3,100.00	0.00	0.00	3,084.81	-211.28	-87.83	228.81	0.00	0.00	0.00
3,200.00	0.00	0.00	3,184.81	-211.28	-87.83	228.81	0.00	0.00	0.00
3,300.00	0.00	0.00	3,284.81	-211.28	-87.83	228.81	0.00	0.00	0.00
3,400.00	0.00	0.00	3,384.81	-211.28	-87.83	228.81	0.00	0.00	0.00
3,500.00	0.00	0.00	3,484.81	-211.28	-87.83	228.81	0.00	0.00	0.00
3,600.00	0.00	0.00	3,584.81	-211.28	-87.83	228.81	0.00	0.00	0.00
3,700.00	0.00	0.00	3,684.81	-211.28	-87.83	228.81	0.00	0.00	0.00
3,800.00	0.00	0.00	3,784.81	-211.28	-87.83	228.81	0.00	0.00	0.00
3,900.00	0.00	0.00	3,884.81	-211.28	-87.83	228.81	0.00	0.00	0.00
SX									
3,926.19	0.00	0.00	3,911.00	-211.28	-87.83	228.81	0.00	0.00	0.00
4,000.00	0.00	0.00	3,984.81	-211.28	-87.83	228.81	0.00	0.00	0.00
4,100.00	0.00	0.00	4,084.81	-211.28	-87.83	228.81	0.00	0.00	0.00
4,200.00	0.00	0.00	4,184.81	-211.28	-87.83	228.81	0.00	0.00	0.00
4,300.00	0.00	0.00	4,284.81	-211.28	-87.83	228.81	0.00	0.00	0.00
4,400.00	0.00	0.00	4,384.81	-211.28	-87.83	228.81	0.00	0.00	0.00
4,500.00	0.00	0.00	4,484.81	-211.28	-87.83	228.81	0.00	0.00	0.00

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Well:	Johnstown Farms 19-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	Johnstown Farms 19-9		
Design:	Johnstown Farms 19-9 (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,600.00	0.00	0.00	4,584.81	-211.28	-87.83	228.81	0.00	0.00	0.00
4,700.00	0.00	0.00	4,684.81	-211.28	-87.83	228.81	0.00	0.00	0.00
4,800.00	0.00	0.00	4,784.81	-211.28	-87.83	228.81	0.00	0.00	0.00
4,900.00	0.00	0.00	4,884.81	-211.28	-87.83	228.81	0.00	0.00	0.00
5,000.00	0.00	0.00	4,984.81	-211.28	-87.83	228.81	0.00	0.00	0.00
5,100.00	0.00	0.00	5,084.81	-211.28	-87.83	228.81	0.00	0.00	0.00
5,200.00	0.00	0.00	5,184.81	-211.28	-87.83	228.81	0.00	0.00	0.00
5,300.00	0.00	0.00	5,284.81	-211.28	-87.83	228.81	0.00	0.00	0.00
5,400.00	0.00	0.00	5,384.81	-211.28	-87.83	228.81	0.00	0.00	0.00
5,500.00	0.00	0.00	5,484.81	-211.28	-87.83	228.81	0.00	0.00	0.00
5,600.00	0.00	0.00	5,584.81	-211.28	-87.83	228.81	0.00	0.00	0.00
5,700.00	0.00	0.00	5,684.81	-211.28	-87.83	228.81	0.00	0.00	0.00
5,800.00	0.00	0.00	5,784.81	-211.28	-87.83	228.81	0.00	0.00	0.00
5,900.00	0.00	0.00	5,884.81	-211.28	-87.83	228.81	0.00	0.00	0.00
6,000.00	0.00	0.00	5,984.81	-211.28	-87.83	228.81	0.00	0.00	0.00
6,100.00	0.00	0.00	6,084.81	-211.28	-87.83	228.81	0.00	0.00	0.00
6,200.00	0.00	0.00	6,184.81	-211.28	-87.83	228.81	0.00	0.00	0.00
6,300.00	0.00	0.00	6,284.81	-211.28	-87.83	228.81	0.00	0.00	0.00
6,400.00	0.00	0.00	6,384.81	-211.28	-87.83	228.81	0.00	0.00	0.00
6,500.00	0.00	0.00	6,484.81	-211.28	-87.83	228.81	0.00	0.00	0.00
6,600.00	0.00	0.00	6,584.81	-211.28	-87.83	228.81	0.00	0.00	0.00
6,700.00	0.00	0.00	6,684.81	-211.28	-87.83	228.81	0.00	0.00	0.00
6,800.00	0.00	0.00	6,784.81	-211.28	-87.83	228.81	0.00	0.00	0.00
NIO									
6,811.19	0.00	0.00	6,796.00	-211.28	-87.83	228.81	0.00	0.00	0.00
6,900.00	0.00	0.00	6,884.81	-211.28	-87.83	228.81	0.00	0.00	0.00
7,000.00	0.00	0.00	6,984.81	-211.28	-87.83	228.81	0.00	0.00	0.00
7,100.00	0.00	0.00	7,084.81	-211.28	-87.83	228.81	0.00	0.00	0.00
CD									
7,135.19	0.00	0.00	7,120.00	-211.28	-87.83	228.81	0.00	0.00	0.00
7,200.00	0.00	0.00	7,184.81	-211.28	-87.83	228.81	0.00	0.00	0.00
GH									
7,218.19	0.00	0.00	7,203.00	-211.28	-87.83	228.81	0.00	0.00	0.00
7,295.19	0.00	0.00	7,280.00	-211.28	-87.83	228.81	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Johnstown 19-9 BHL - hit/miss target - Shape - plan hits target center - Point	0.00	0.00	7,280.00	-211.28	-87.83	1,361,317.02	3,166,933.97	40° 19' 25.208 N	104° 54' 4.637 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
751.84	750.00	9 5/8"	9.625	12.250	

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Johnstown Farms 19-9
Company:	ANADARKO PETROLEUM CORP.	TVD Reference:	WELL @ 4780.00ft (Original Well Elev)
Project:	ANADARKO COLORADO NOTHERN ZONE NAD 83	MD Reference:	WELL @ 4780.00ft (Original Well Elev)
Site:	WELD_Johnstown Farms	North Reference:	True
Well:	Johnstown Farms 19-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	Johnstown Farms 19-9		
Design:	Johnstown Farms 19-9 (wp01)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
7,218.19	7,203.00	GH		0.00		
7,135.19	7,120.00	CD		0.00		
6,811.19	6,796.00	NIO		0.00		
3,926.19	3,911.00	SX		0.00		



ANADARKO PETROLEUM CORP.

**ANADARKO COLORADO NOTHERN ZONE NAD 83
WELD_Johnstown Farms
Johnstown Farms 19-9**

**Johnstown Farms 19-9
Johnstown Farms 19-9 (wp01)**

Anticollision Summary Report

27 September, 2010



Company:	ANADARKO PETROLEUM CORP.	Local Co-ordinate Reference:	Well Johnstown Farms 19-9
Project:	ANADARKO COLORADO NOTHERN ZONE NAD 83	TVD Reference:	WELL @ 4780.0ft (Original Well Elev)
Reference Site:	WELD_Johnstown Farms	MD Reference:	WELL @ 4780.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Johnstown Farms 19-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Johnstown Farms 19-9	Database:	EDM 2003.21 Single User Db
Reference Design:	Johnstown Farms 19-9 (wp01)	Offset TVD Reference:	Offset Datum

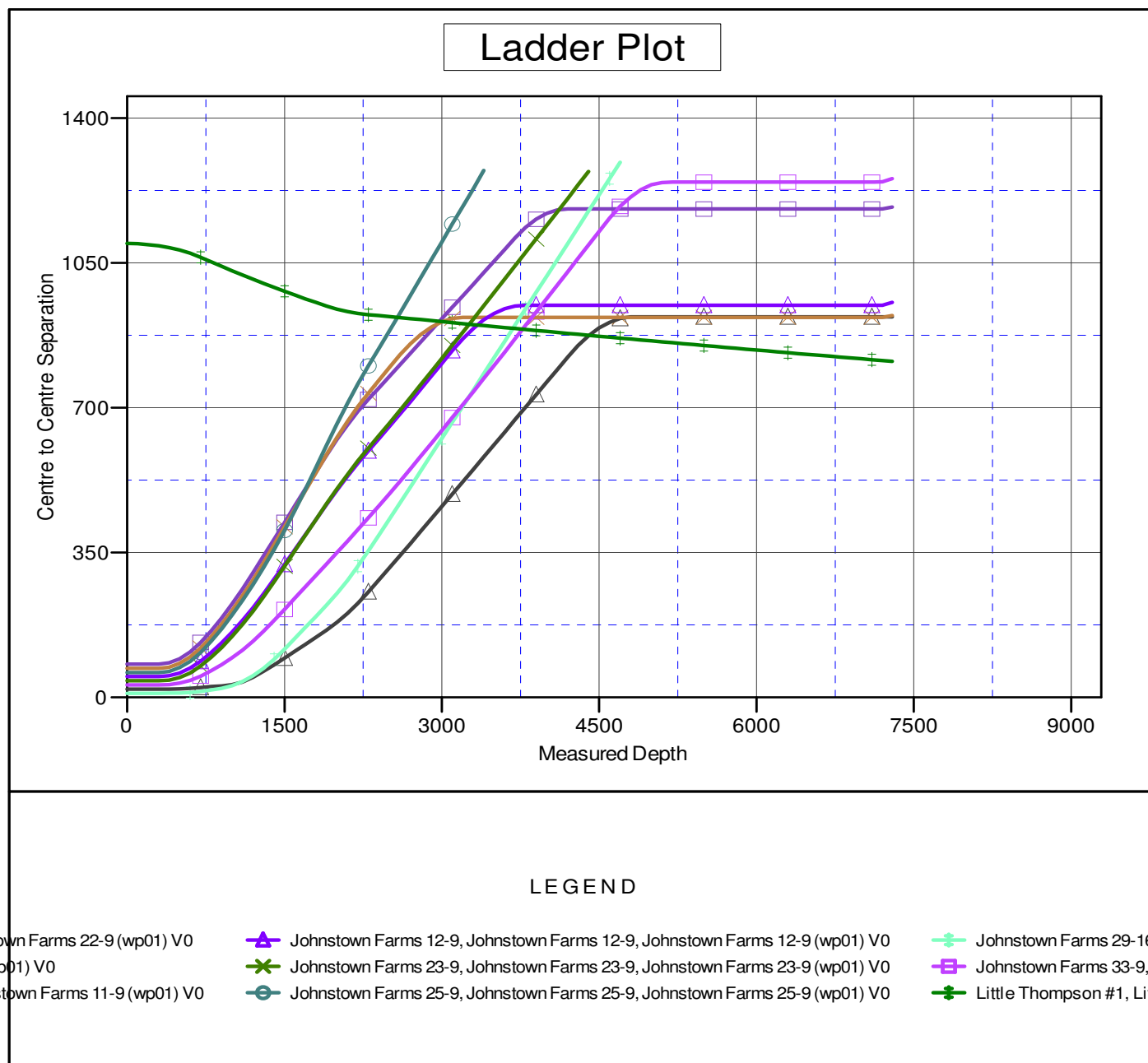
Reference	Johnstown Farms 19-9 (wp01)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,300.8ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 9/27/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	7,295.2	Johnstown Farms 19-9 (wp01) (Johnstowr	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
WELD_Johnstown Farms						
HSR-Leahy #10-9 - HSR Leahy #10-9 - HSR Leahy #10-9						Out of range
Johnston Farms 22-9 - Johnstown Farms 22-9 - Johnst	300.0	300.0	80.2	79.0	71.332 CC, ES	
Johnstown 13-9 - Johnstown 13-9 - Johnstown 13-9 (wpC	300.0	300.0	19.9	18.8	17.690 CC	
Johnstown Farms 11-9 - Johnstown Farms 11-9 - Johnst	300.0	300.0	70.1	69.0	62.359 CC, ES	
Johnstown Farms 12-9 - Johnstown Farms 12-9 - Johnst	300.0	300.0	50.2	49.1	44.669 CC, ES	
Johnstown Farms 23-9 - Johnstown Farms 23-9 - Johnst	300.0	300.0	40.1	39.0	35.695 CC, ES	
Johnstown Farms 25-9 - Johnstown Farms 25-9 - Johnst	300.0	300.0	59.9	58.8	53.313 CC, ES	
Johnstown Farms 29-16 - Johnstown Farms 29-16 - Johi	300.0	300.0	10.1	9.0	9.029 CC	
Johnstown Farms 33-9 - Johnstown Farms 33-9 - Johnst	300.0	300.0	30.0	28.8	26.664 CC, ES	
Johnstown 13-9 - Johnstown 13-9 - Johnstown 13-9 (wpC	400.0	400.6	20.0	18.5	13.090 ES	
Johnstown Farms 29-16 - Johnstown Farms 29-16 - Johi	500.0	500.7	10.5	8.6	5.487 ES	
Johnstown Farms 23-9 - Johnstown Farms 23-9 - Johnst	600.0	597.9	59.0	56.6	24.429 SF	
Johnstown Farms 25-9 - Johnstown Farms 25-9 - Johnst	600.0	592.9	87.1	84.6	35.700 SF	
Johnstown Farms 29-16 - Johnstown Farms 29-16 - Johi	600.0	600.9	11.7	9.4	4.995 SF	
Johnstown Farms 33-9 - Johnstown Farms 33-9 - Johnst	600.0	600.4	41.2	38.8	17.089 SF	
Johnstown 13-9 - Johnstown 13-9 - Johnstown 13-9 (wpC	1,000.0	1,002.5	30.8	25.7	6.117 SF	
Johnstown Farms 12-9 - Johnstown Farms 12-9 - Johnst	7,200.0	7,295.1	947.8	915.0	28.851SF	
Johnston Farms 22-9 - Johnstown Farms 22-9 - Johnsto	7,295.2	7,295.4	1,185.2	1,152.7	36.516 SF	
Johnstown Farms 11-9 - Johnstown Farms 11-9 - Johnst	7,295.2	7,287.0	922.9	891.0	28.966 SF	
Little Thompson #1 - Little Thompson #1 - Little Thompsc	7,295.2	7,297.0	812.5	779.8	24.877 CC, ES, SF	

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Reference Site:	WELD_Johnstown Farms	MD Reference:	WELL @ 4780.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Johnstown Farms 19-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Johnstown Farms 19-9	Database:	EDM 2003.21 Single User Db
Reference Design:	Johnstown Farms 19-9 (wp01)	Offset TVD Reference:	Offset Datum

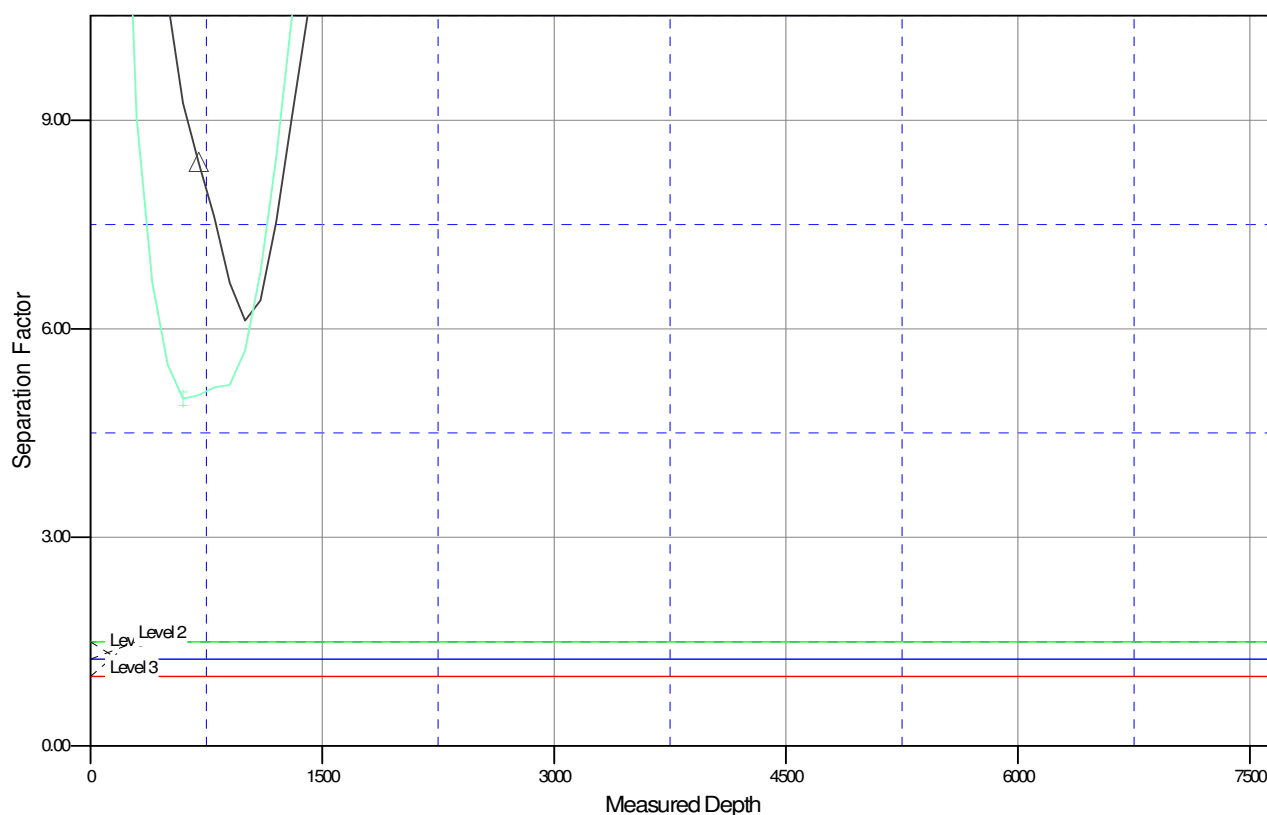
Reference Depths are relative to WELL @ 4780.0ft (Original Well Elev) Coordinates are relative to: Johnstown Farms 19-9
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.39°



Company:	ANADARKO PETROLEUM CORP.	Local Co-ordinate Reference:	Well Johnstown Farms 19-9
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Reference Site:	WELD_Johnstown Farms	MD Reference:	WELL @ 4780.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Johnstown Farms 19-9	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Johnstown Farms 19-9	Database:	EDM 2003.21 Single User Db
Reference Design:	Johnstown Farms 19-9 (wp01)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4780.0ft (Original Well Elev) Coordinates are relative to: Johnstown Farms 19-9
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.39°

Separation Factor Plot



LEGEND

Johnstown Farms 22-9 (wp01) V0	Johnstown Farms 12-9, Johnstown Farms 12-9, Johnstown Farms 12-9 (wp01) V0	Johnstown Farms 29-16, Johnstown Farms 29-16, Johnstown Farms 29-16 (wp01) V0
Johnstown Farms 21-9 (wp01) V0	Johnstown Farms 23-9, Johnstown Farms 23-9, Johnstown Farms 23-9 (wp01) V0	Johnstown Farms 33-9, Johnstown Farms 33-9, Johnstown Farms 33-9 (wp01) V0
Johnstown Farms 11-9 (wp01) V0	Johnstown Farms 25-9, Johnstown Farms 25-9, Johnstown Farms 25-9 (wp01) V0	Little Thompson #1, Little Thompson #1, Little Thompson #1 (wp01) V0